

30. (NEW) A heat exchanger mounted to a vehicle body of a vehicle,
the heat exchanger comprising:

a plurality of beam-like brackets extending transversely across the
vehicle, the plurality of beam-like brackets being fixed to side members of the vehicle
body;

wherein the heat exchanger is mounted on the vehicle through the
plurality of brackets and the heat exchanger constitutes a strength member of the
vehicle.

REMARKS

Claims 1, 3, 4, 6, 7, 9, 10, 12, 13, 15, 16, 18, 19, 21, 22 and 24-30 remain
pending in the present application. Claims 2, 5, 8, 11, 14, 17, 20 and 23 have been
cancelled. Claims 1, 3, 4, 6, 7, 9, 10, 12, 13, 15, 16, 18, 19, 21 and 22 have been
amended. Basis for the amendments and new claims can be found throughout the
specification, claims and drawings as originally filed.

REJECTION UNDER 35 U.S.C. § 112

Claims 1, 2, and 3 are rejected under 35 U.S.C. 112, second paragraph,
as being indefinite for failing to particularly point out and distinctly claim the subject
matter which applicant regards as the invention. Claims 1 and 3 have been amended to
overcome the rejection. Claim 2 has been cancelled. Reconsideration of the rejection
is respectfully requested.

REJECTION UNDER 35 U.S.C. § 102

Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Masuda U.S. Patent No. 5,409,288. Claims 3, 4, 6, 7, 9, and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Iwasaki et al. U.S. Patent No. 5,046,554.

As described in new Claim 1, the present invention comprises a heat exchanger mounted to a vehicle body of a vehicle which includes beam-like brackets (300, 310) extending transversely across the vehicle, each being formed with an assembling portion (301) for assembling equipment other than the heat exchanger (400). The heat exchanger (400) is mounted on the vehicle through the brackets (300, 310). Thereby the heat exchanger (400) has the dual function of a reinforcing member for reinforcing the vehicle body when it is mounted on the vehicle.

The present invention is described on pages 1 to 3 of the specification, the claims and the abstract. In the present invention, a front-end module (410), that is, an integrated heat exchanger assembly (400) (comprising a radiator (100) and a condenser (200)) with a pair of brackets (300) (300) fixed to a header tanks (120) (220) thereof becomes a strength member, instead of a front-end panel as a reinforcing member which is used in conventional vehicles.

(7) However, Masuda (U.S. Patent No. 5,409,288, that is reference A) does not disclose this feature of the present invention. In reference A, since radiator mounting central frame 11 as a front-end panel (reinforcing member) is described, radiator 2 and condenser 3 do not substantially act as reinforcement members for the vehicle.

(8) Further, the Examiner stated in the Office Action the Claims 3, 4, 6, 7, 9, and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Iwasaki et al. (U.S. Patent No. 5,046,554, that is, reference B). However, from the descriptions in column 6, line 39 to column 7, line 20, and Figs. 3 to 7 of the reference B, heat exchangers 43 and 44 are fixed at reinforcement members 79, 97 (not manifolds 70, 74, 90 and 93) to the end wall 50 of a shroud 42 (not a vehicle body) by a plurality of bolts 100 (not brackets). Tubular members 72, 75, 92 and 94 extending from the manifolds 70, 74, 90 and 93 only pass through apertures 63, 64 formed on the shroud 42. Thus, reference B does not disclose the features of the present invention in amended Claims 3 and 4.

Thus, Applicant believes independent Claims 1, 3 and 4, as amended, patentably distinguish over the art of record. Likewise, Claims 6, 7, 9 and 10 which ultimately depend from one of these independent claims are also believe to patentably distinguish over the art of record. Claim 2 has been cancelled. Reconsideration of the rejection is respectfully requested.

REJOINDER OF CLAIMS

Applicant respectfully requests the rejoinder of Claims 12, 13, 15, 16, 18, 19, 21 and 22.

NEW CLAIMS

New Claims 24-27 ultimately depend from Claim 1. New Claim 28 depends from Claim 3. New Claims 29 and 30 are independent claims which include limitations similar to those in amended Claims 1, 3 or 4. Applicant believes new Claims 24-30 read on the elected species.

CONCLUSION

It is believed that all of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider and withdraw all presently outstanding rejections. It is believed that a full and complete response has been made to the outstanding Office Action, and as such, the present application is in condition for allowance. Thus, prompt and favorable consideration of this amendment is respectfully requested. If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (248) 641-1600.

Respectfully submitted,

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By: 

Michael J. Schmidt
Reg. No. 34,007

HARNESS, DICKEY & PIERCE, P.L.C.
P.O. Box 828
Bloomfield Hills, Michigan 48303
(248) 641-1600

ATTACHMENT FOR CLAIM AMENDMENTS

The following is a marked up version of each amended claim in which underlines indicates insertions and brackets indicate deletions.

1. (AMENDED) A [vehicle-mounted structure of a] heat exchanger mounted to a vehicle body of a vehicle, the heat exchanger comprising:

beam-like brackets extending transversely across the vehicle, each beam-like bracket being formed with an assembling portion for assembling equipment other than the heat exchanger, the heat exchanger being mounted on the vehicle through the brackets;

wherein[characterized in that] the heat exchanger [having the dual function]acts as a reinforcing member for reinforcing the vehicle body [is]when mounted on [a]the vehicle.

3. (AMENDED) A heat exchanger mounted on a vehicle, the heat exchanger [characterized by] comprising

a plurality of tubes for passing a fluid therethrough,

header tanks arranged at [the] longitudinal ends, respectively, of the plurality of tubes and communicating with [a]the plurality of the tubes, and

beam-like brackets mounted on said header tanks[,], extending in a horizontal direction and being fixed [on]to the vehicle.

4. (AMENDED) A heat exchanger assembly mounted on a vehicle, the heat exchanger assembly comprising:

a first heat exchanger including a plurality of first tubes for passing a first fluid therethrough and first header tanks arranged at [the] longitudinal ends, respectively, of the plurality of first tubes for communicating with [a]the plurality of [the] first tubes thereby to exchange heat between the air and the first fluid; and

a second heat exchanger including a plurality of second tubes for passing a second fluid therethrough and second header tanks arranged at [the] longitudinal ends, respectively, of the plurality of second tubes for communicating with [a]the plurality of [the] second tubes thereby to exchange heat between the air and the second fluid;

[characterized in that]wherein the [two]first and second heat exchangers are arranged integrally in series with each other along the direction of air flow, and a beam-like bracket extending in a horizontal direction and fixed on the vehicle is coupled to or integrated with [at least each of]said first header tanks.

6. (AMENDED) A heat exchanger as described in Claim 3, [characterized in that]wherein said beam-like brackets are each formed with an assembling portion for assembling equipment other than the heat exchanger.

7. (AMENDED) A heat exchanger assembly as described in Claim 4, [characterized in that]wherein said [brackets are each]beam-like bracket is formed with an assembling portion for assembling equipment other than the heat exchanger.

9. (AMENDED) A heat exchanger as described in Claim 3, [characterized in that]wherein said beam-like brackets are each formed with an assembling portion for assembling [the]a headlight.

10. (AMENDED) A heat exchanger assembly as described in Claim 4, [characterized in that]wherein said beam-like bracket is [brackets are each] formed with an assembling portion for assembling [the]a headlight.

12. (AMENDED) A heat exchanger as described in Claim 6, [characterized in that]wherein each of said beam-like brackets [are of two types]comprise two components, one formed with the assembling portion and the other not formed with the assembling portion.

13. (AMENDED) A heat exchanger assembly as described in Claim 7, [characterized in that] said beam-like bracket comprises two components [brackets are of two types], one formed with the assembling portion and the other not formed with the assembling portion.

15. (AMENDED) A heat exchanger as described in Claim 12, [characterized in that]wherein the two [types of brackets]components and the assembling portion are integrated with each other.

16. (AMENDED) A heat exchanger assembly as described in Claim 13, [characterized in that]wherein the two [types of brackets]components and the assembling portion are integrated with each other.

18. (AMENDED) A heat exchanger as described in Claim 9, [characterized in that]wherein in each of said beam-like brackets [are of two types]comprise two components, one formed with the assembling portion and the other not formed with the assembling portion.

19. (AMENDED) A heat exchanger assembly as described in Claim 10, [characterized in that] said beam-like bracket comprises two components [brackets are of two types], one formed with the assembling portion and the other not formed with the assembling portion.

21. (AMENDED) A heat exchanger as described in Claim 18, [characterized in that]wherein the two [types of brackets]components and the assembling portions are integrated with each other.

22. (AMENDED) A heat exchanger assembly as described in Claim 19, [characterized in that]wherein the two [types of brackets]components and the assembling portions are integrated with each other.